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General Infection by the Diplococcus Intracellularis in an Infant.

By John Zahorsky, M.D., Assistant to the Chair of Pediatrics, Missouri Medical College; House Physician to the Bethesda Foundling Home.

The report of a case of septicæmia due to the diplococcus intra-cellularis by Gwyn (Phil. Med. Jour., Vol. 2, No. 24) recalls a similar case in an infant that occurred in the Bethesda Foundling Home of St. Louis in August, 1897.

The patient was a boy 15 months old. He had been an inmate of the Home since his first month. Several times during his early months he suffered from gastro-enteric infection. At seven months he showed very evident signs of rickets. He had been fed on cendensed milk. This improved under treatment. In March, 1897, he passed through a severe attack of pleuro-pneumonia. After this he gained in weight and became a fine looking baby.

On June 11th he received a heat-stroke. His temperature at that time rose to 108 deg. F. Under cold baths and stimulation he recovered. Considerable anæmia followed. Since the early spring of 1897, he had a suppurative otitis media. This improved under treatment, but had not entirely subsided when he developed acute lepto-meningitis. It seems possible that the in-

fection extended along the auditory nerve to the brain.

Sept. 2, 1898.—Infant has high fever. After a careful examination no cause for it could be discovered. Prescribed pilocarpine.

Sept. 3.—Fever continues persistently at 105 deg. to 107 deg. Stools slightly offensive. Infant with this hyperpyrexia is very bright and playful. Takes food readily and does not seem very sick. Excessive pulsation of the anterior fontanelle is noticed. The blood examination shows a hyperlencocytosis.

Sept. 4.—Patient takes less food. Vomited several times. The anterior fontanelle is bulging, and exhibits a strong pulsation. Ice bag to the head and iodides.

Sept. 5, 9 A. M.—Anterior fontanelle very tense, foul stools; used enteroclysis. Pulse rapid, regular. Vomited several times. Dullness over left lung.

6 P. M.—Infant has been stupid all the afternoon. Has twitching of right side. Constipation. Urine passed freely. The existence of right hemiplegia easily made out. Extremities are cold. Slightly mottled skin. Temperature 103 deg.; pulse 112, and irregular; respiration irregular, almost Cheyne-stokes. Right pupil very much dilated; left contracted. Paralysis of right ocular muscles. Left eye more prominent, veins distended (suspect sinus thrombosis). Coronal and saggital sutures are wide open. Clonic spasms of right foot. Hyperæsthesia of the skin. Dullness over right lower lobe of lung increased.

Sept. 6, 10 A. M.—Coma, absence of all

reflexes—even corneal—rigidity of extremities and trunk, more marked on right side. Had one general convulsion during the night. No petechiæ or blood extravasations found. Large peliomata of skin. Death by apnœa; respiration ceased several seconds before heart stopped.

The post-mortem examination, a few hours after death, revealed the typical picture of a meningo-encephalitis. Namely, enormous congestion of the pia, and arachnoid and an intimate adhesion of the pia in places to the brain substance. The cerebro-spinal fluid very much increased and milky in appearance. The soft membranes of spinal cord to the second dorsal vertebra, also very much inflamed. The whole cerebral meninges covered by a yellowish fibrino-purulent exudate. The encephalitis was most marked over the motor area of the left hemisphere. Here existed a very intimate adhesion of soft membranes and brain, and the latter was very much softened. Marked congestion of dura over the region of the middle meningeal artery was noticed.

The exudate was found at the base of the brain and under the tentorium, covering the pia on the superior vermiform body of the cerebellum.

The right motor oculi and patheticus showed marked neuritis. The tegmen tympani was not perforated, but on the left side a marked auditory neuritis was present. The cochlea and semi-circular canals were infiltrated with pus. Thrombosis of the left lateral sinus also existed.

The pleural cavities contained consider-

able fluid. Extensive adhesions were present on the right side due to the previous pleuro-pneumonia. The lung exhibited marked congestion of lower lobes and considerable œdema. Heart large, no pericarditis. Valves of heart reddened but not thickened. Thymus gland was normal. Liver looks pale, spleen normal. Intestine distended with gas and contains foul, fæcal matter. The lymph follicles of large and small intestine were infiltrated and swollen. The bladder was distended with urine. Kidneys congested.

Cultures were made from the cerebral exudate, from the congested lungs, and from the blood and kidneys. From each of these sources pure cultures of the diplococcus intracellularis meningitidis were obtained. Evidently in this case a septicæmia due to this micro-organism existed some time before death. The pneumonic congestion, which resembled very much the first stage of croupous pneumonia, was probably due to a localization of the meningococcus.

In conclusion, allow me to point out that a very high fever, occurring suddenly, and not producing in an infant signs of prostration and malaise points to meningitis. This symptom occurs in nearly half the cases of acute leptomeningitis. It is due, no doubt, to a disturbance of the heat regulation without toxæmia. I have found this sign a valuable aid in the early diagnosis of meningitis.

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